

## REMARKS

### Discussion of Claim Amendment

Claims 1, 8, and 19 have been amended by replacing "resin composition (A) layer" with --non-photosensitive resin composition (A) layer--. In accordance with the claimed invention, the resin composition (A) layer does not undergo photopolymerization. The resin is non-photosensitive. No new matter has been added.

### The Office Action

The Office Action sets forth the following grounds for rejection: (1) claim 16 is rejected under 35 U.S.C. § 112, first paragraph, for an alleged lack of support; (2) claims 1, 7-8, 15, and 17-19 are rejected under 35 U.S.C. § 102(e), as allegedly anticipated by U.S. Patent 6,329,111 (Nojiri et al.); (3) claim 16 is rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Nojiri et al. in view of U.S. Patent 4,842,987 (Elzer et al.); (4) claims 2-6 and 10-14 are rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Nojiri in view of U.S. Patent 5,858,616 (Tanaka et al.); (5) claims 1-8, 10-15, and 17-19 are rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Tanaka et al. in view of U.S. Patent 5,922,395 (Koike et al.); and (6) claim 16 is rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Tanaka et al. in view of Koike and further in view of Elzer et al.

### The Present Invention

The present invention relates to a process for forming a pattern of fluorescent substance into a cell for producing a fluorescent substance display device such as a plasma display panel. Claims 1-6, 8-14, and 17-19 are currently pending. A complete set of pending claims is attached.

### Discussion of Rejection Under § 112, Second Paragraph

As claim 16 has been cancelled, this rejection has been rendered moot.

### Discussion of Anticipation Rejection

Claims 1, 8, and 19 have been amended as discussed above. Claims 7, 15, and 17-18 are dependent upon claim 1 or 8. The amended claims rendered the rejection moot. Nojiri et al. fails to disclose the presently claimed invention. Nojiri et al. discloses that a fluorescent substance-containing photosensitive resin composition layer is disposed between the inside of the cell and the thermoplastic resin (column 30, lines 24-29). In contrast, the presently claimed invention recites that a fluorescent substance-containing resin composition layer (which is a nonphotosensitive resin layer) is disposed between the inside of the cell and the photosensitive

resin composition layer. In Nojiri et al., a photosensitive resin is used for a fluorescent substance-containing photosensitive layer. On the other hand, a nonphotosensitive resin is used for the fluorescent substance containing resin composition layer in the presently claimed invention. Accordingly, the presently claimed invention is distinct from Nojiri et al. A significant difference exists when a photosensitive resin is used for a fluorescent substance containing resin composition layer to impart photopolymerization property. Defects occur when baking is carried out.

In view of the foregoing, the anticipation rejection of claims 1, 7-8, 15, and 17-19 should be withdrawn.

#### Discussion of Obviousness Rejections

##### Claim 16

As claim 16 has been cancelled, the obviousness rejections of this claim have been rendered moot.

##### Claims 1-8, 10-15, and 17-19

These claims are rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Tanaka et al. in view of Koike et al. Applicant respectfully traverses this rejection.

Tanaka et al describes a single layer. Koike et al. describes a photosensitive resin composition layer placed on a pigment layer.

Tanaka describes a photosensitive resin composition containing a phosphor, but there is no description of two-layer structure as recited in the present claims. Furthermore, the fluorescent substance-containing resin composition layer of the present invention is non-photosensitive, which is different from the photosensitive resin composition containing fluorescent subsistence.

In Koike et al, silica is coated on a pigment layer from which the resist was peeled off, and then a phosphor layer is formed on the silica coated pigment layer. In this case, the phosphor layer is formed by applying slurry without a resist. Furthermore, in Koike et al. the resist is not used for forming the phosphor layer (fluorescent substance-containing resin composition layer) but instead, a photosensitive resin is used for forming the pigment layer, and thus this reference is different from the present invention in this regard.

In Koike et al, photosensitive resin is used so that pigments of different colors do not mix with each other when each cell is filled with the pigment. In the present invention, however, photosensitive resin is used so that "the fluorescent substance is fixed in the cell (line 11, page 15)" when "the resin component of the resin composition (A) layer and the photosensitive resin composition (B) layer were (are) baked (line 26, page 18 of the

specification)". In this way, the purpose of using photosensitive resin is entirely different between these two inventions.

Since a fluorescent substance-containing non-photosensitive resin composition is used for the layer, the present invention has an extremely excellent effect that pattern defect is very unlikely to occur, even if "the resin component of the resin composition (A) layer and the photosensitive resin composition (B) layer were baked" and "the fluorescent substance is fixed in the cell".

Koike et al. is directed to cathode ray tubes. In view of this, cell filling property and uniform pattern of the fluorescent substance are irrelevant to Koike et al., but are specific to the present invention.

In view of the foregoing, the obviousness rejection of claims 1-8, 10-15, and 17-19 should be withdrawn.

Claims 2-6 and 10-14

These claims are rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Nojiri et al. in view of Tanaka et al. Applicant respectfully traverses this rejection.

As discussed, claims 1 and 8 have been amended. Claims 2-6 and 10-14 are dependent upon claim 1 or 8. Nojiri et al. and Tanaka et al., either alone or in combination, fail to suggest to those of ordinary skill in the art the presently claimed invention.

In view of the foregoing, the obviousness rejection of claims 2-6 and 10-14 should be withdrawn.

Conclusion

The application is considered in good and proper form for allowance. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,



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**PATENT**  
Attorney Docket No. 400113/ASAHINA

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of:

HIROAKI SATOH

Application No. 09/271,447

Art Unit: 1762

Filed: March 18, 2002

Examiner: M. Cleveland

For: PROCESS FOR FORMING A  
PATTERN OF FLUORESCENT  
SUBSTRATE AND PLASMA  
DISPLAY PANEL

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**AMENDMENTS TO CLAIMS MADE IN RESPONSE TO  
OFFICE ACTION DATED APRIL 3, 2002**

*Amendments to existing claims:*

1. (Twice Amended) A process for forming a pattern of fluorescent substance into the cell of a fluorescent substance display substrate comprising providing inside the cell two separate layers which are (i) a non-photosensitive resin composition (A) layer and (ii) a photosensitive resin composition (B) layer, exposing the layers to light, developing the exposed layers, and baking the developed layers; wherein the resin composition (A) layer comprises an acrylic polymer (a) having a weight average molecular weight of 10000 to 300000 and an acid number of 80 to 250 mgKOH/g and a fluorescent substance (b), and the resin composition (A) layer is disposed between the inside of the cell and the photosensitive resin composition (B) layer.

8. (Amended) A process for forming a pattern of fluorescent substance into the cell of a fluorescent substance display substrate, wherein a non-photosensitive resin composition (A) layer, comprising an acrylic polymer (a) having a weight average molecular weight of 10000 to 300000 and an acid number of 80 to 250 mgKOH/g and a fluorescent substance (b), and a photosensitive resin composition (B) layer are formed inside the cell, and then they are exposed, developed and baked, wherein the photosensitive resin composition (B) layer is formed in the cell after the resin composition (A) layer is formed.

19. (Amended) A process for forming a pattern of fluorescent substance into the cell of a fluorescent substance display substrate comprising providing inside the cell two separate

layers which are (i) a non-photosensitive resin composition (A) layer and (ii) a photosensitive resin composition (B) layer, wherein the resin composition (A) layer, comprising an acrylic polymer (a) having a weight average molecular weight of 10000 to 300000 and an acid number of 80 to 250 mgKOH/g and a fluorescent substance (b), and the photosensitive resin composition (B) layer are formed inside the cell, and then they are exposed, developed and baked, wherein the photosensitive resin composition (B) layer is formed in the cell after the resin composition (A) layer is formed.